Remarks

Applicants respectfully request reconsideration of the present application in view of the above amendment and following remarks. The specification has been amended to correct a minor informality that is unrelated to patentability. No claims have been amended, added or cancelled. Therefore, claims 1-21 are pending in the present application.

Claims 1-21 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,131,545 to Kreuter ("the Kreuter reference"). Applicants respectfully traverse this rejection.

Claim 1 is directed to a variable valve actuation mechanism for use with an engine, the engine including a rotary camshaft having a central axis and at least one input cam lobe. The mechanism includes a control shaft assembly, an integrated body and a spring. The control shaft assembly includes at least one shaft segment having a shaft axis and at least one pivot segment having a pivot axis. The shaft axis is substantially parallel relative to and spaced apart from the pivot axis. Each of the pivot and the shaft axes are substantially parallel relative to and spaced apart from the central axis of the camshaft. Further, the control shaft assembly is pivotable relative to the pivot axis. The integrated body is pivotally disposed on the at least one shaft segment and includes an input cam follower and at least one output cam surface. The input cam follower is configured for engaging the input cam lobe, and the at least one output cam surface is configured for engaging a corresponding output cam follower of the engine. The spring engages the integrated

body and is configured for biasing the input cam follower into engagement with the input cam lobe.

None of the references of record teach or suggest a variable valve actuation mechanism having an integrated body pivotally disposed on at least one shaft segment as recited in claim 1. In rejecting claim 1, the Examiner stated that the coupling lever (26) in the Kreuter reference teaches the integrated body in the present invention, and the coupling shaft (18) teaches the at least one shaft segment in the present invention. *See Office Action*, pg. 2. However, the coupling lever (26) is not pivotally disposed on the coupling shaft (18). Instead, the Kreuter reference clearly states that the coupling lever (26) is fixedly or rigidly connected to the coupling shaft (18). *See* Col. 4, lines 32-33. Since the Kreuter reference fails to teach or suggest all of the limitations included in claim 1, Applicants request that the rejection of claim 1 be withdrawn. *See W.L. Gore & Assocs. V. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983) (requiring that a single prior art reference disclose all of the elements in the claim under consideration).

In addition, none of the references of record include an integrated body having at least one output cam surface as recited in claim 1. As stated above, the Examiner used the coupling lever (26) in the Kreuter reference to teach the integrated body in the present invention, and thus used the end portion (28) of the coupling lever (26) to teach the at least one output cam surface. *See Office Action*, pg. 2.

Applicants submit that the end portion (28) is not an output cam surface as recited in claim 1. As best seen in FIG. 1, the end portion (28) of the coupling lever

(26) includes a top surface and a bottom surface. The bottom surface is described as being located directly above the bushing (10), but there is nothing to indicate that the bottom surface actually contacts the bushing (10). In particular, FIGS. 1 and 2 of the Kreuter reference best illustrate that the bottom surface of the end portion (28) does not engage or come into contact with the bushing (10). Thus, the bottom surface is not a cam surface because it does not come into contact with anything. As for the top surface of the end portion (28), it is adapted to be secured in position by the solenoid (32) to disengage the shaft (18) from the cutout (50). *See* Col. 4, lines 53-55; Col. 5, lines 17-24. Therefore, the top surface is not a cam surface because it is merely used for selective engagement with the solenoid (32). Furthermore, neither the top surface or the bottom surface are cam surfaces that result in any type of output (i.e., an output cam surface). Instead, the output cam in the Kreuter reference appears to be the lower cylindrical surface of the tappet (48). *See Kreuter*, FIG. 4.

Further, none of the references of record include an integrated body having at least one output cam surface configured for engaging a corresponding output cam follower as recited in claim 1. In rejecting claim 1, the end portion (28) in the Kreuter reference was described as engaging the bushing (10). *See Office Action*, at pg. 2. First, the end portion (28) of the coupling lever (26) is not configured for engaging the bushing (10). As best seen in FIGS. 1 and 2 of the Kreuter reference, the end portion (28) does not engage or coming into contact with the bushing (10). The specification of the Kreuter reference further supports this contention in that the end

portion (28) is described as being located directly above the bushing (10), which is shown in FIG. 2 of the Kreuter reference. *See* Col. 4, lines 1-4.

Moreover, the bushing (10) is not an output cam follower as set forth in claim 1 of the present invention. The only component in the Kreuter device that could be considered an output cam is the lower cylindrical surface of the tappet (48) that is in contact with the top end of the valve shaft since the valve shaft controls the opening and closing of the valve (2). *See Kreuter*, FIGS. 1 and 4. Therefore, in order for the bushing (10) to be an output cam follower, the bushing (10) must follow the lower cylindrical surface of the tappet (48) during operation of the Kreuter mechanism. The bushing (10) does not follow the lower cylindrical surface of the tappet (48), and is therefore not an output cam follower.

For at least the aforementioned reasons, Applicants submit that the Kreuter reference does not teach or suggest all of the limitations in claim 1. As such, Applicants request that the rejection of claim 1 be withdrawn. As claims 2-10 depend either directly or indirectly from claim 1, these claims are also not taught or suggested by the Kreuter reference for at least the same reasons set forth with respect to claim 1. Applicants request that the rejection of claims 2-10 be withdrawn.

Dependant claims 2-10 include additional features that further distinguish the present invention from the references of record. For example, claim 2 states that each of the at least one output cam surface includes a base circle portion and a lift portion. There is nothing in the Kreuter reference to indicate that the surfaces of the end portion (28) include a base circle portion and a lift portion.

Dependant claim 5 includes a bearing insert disposed within an orifice defined in the body, wherein a portion of the shaft segment is received within the bearing insert. In rejecting claim 5, it was stated that the roller (14) in the Kreuter reference is disposed within an orifice defined in the coupling lever (26). *See Office Action*, pg. 3. However, as best seen in FIG. 3 of the Kreuter reference, the roller (14) is disposed on the shaft (18), not within an orifice defined in the coupling lever (26). Further, dependant claims 7-10 are directed to spring related elements that are not disclosed by the references of record. For these additional reasons, Applicants request that the rejection of claims 2, 5 and 7-10 be withdrawn.

Claim 11 is directed to an engine having a rotary camshaft with a central axis and at least one input cam lobe. The engine comprises a variable valve actuation mechanism including a control shaft assembly, an integrated body, and a spring. The control shaft assembly includes at least one shaft segment with a shaft axis and at least one pivot segment with a pivot axis. The shaft axis is substantially parallel relative to and spaced apart from the pivot axis. Each of the pivot and the shaft axes are substantially parallel relative to and spaced apart from the central axis of the camshaft. Further, the control shaft assembly is pivotable relative to the pivot axis. The integrated body is pivotally disposed on the at least one shaft segment and includes an input cam follower and at least one output cam surface. The input cam follower engages the input cam lobe, and the at least one output cam surface engages a corresponding output cam follower of the engine. The spring engages the integrated body and biases the input cam follower into engagement with the input cam lobe

For at least the same reasons set forth above with respect to claim 1, none of the reference of record teach or suggest a variable valve actuation mechanism having an integrated body pivotally disposed on at least one shaft segment or an integrated body having at least one output cam surface configured for engaging a corresponding output cam follower as recited in claim 11. Therefore, Applicants request that the rejection of claim 11 be withdrawn.

As claims 12-20 depend from claim 11, these claims are also not taught or suggested by the references of record for at least the same reasons set forth above with respect to claim 11. Further, as set forth with respect to claims 2, 5 and 7-10, claims 12, 15 and 17-20 are further distinguishable over the references of record. Applicants respectfully request that the rejection of claims 11-20 be withdrawn.

Claim 21 is directed to a variable valve actuation mechanism including a control shaft assembly, a body and a spring. The control shaft assembly is pivotable relative to a pivot axis and the body is pivotally disposed on the at least one control shaft assembly. The body includes an input cam follower and at least one output cam surface. The input cam follower is configured for engaging an input cam lobe and the at least one output cam surface is configured for engaging a corresponding output cam follower. The spring engages the body for biasing the input cam follower into engagement with the input cam lobe.

For at least the same reasons set forth above with respect to claim 1, none of the references of record teach or suggest a variable valve actuation mechanism including an body having at least one output cam surface configured for engaging a

corresponding output cam follower as recited in claim 21. Thus, Applicants request that the rejection of claim 21 be withdrawn.

Conclusion

In light of the foregoing, Applicants submit that claims 1-21 are in condition for allowance and such allowance is respectfully requested. Should the Examiner feel that any unresolved issues remain in this case, the undersigned may be contacted at the telephone number listed below to arrange for an issue resolving conference.

Applicants do not believe that any fee is due at this time. However, the Commissioner is hereby authorized to charge any fee that may have been overlooked to Deposit Account No. 10-0223.

Respectfully submitted,

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